

NORTH AFRICA

Algeria's Hard Times Fray Scientific Bonds

Recent events, from global terrorism to natural disasters, have dampened hopes that Algeria will be able to renew its once-strong scientific ties

CAMBRIDGE, U.K.—Jean-Paul Saint Martin was expecting to spend last spring in northern Algeria, seeking clues to help resolve a debate about whether the Mediterranean Sea dried up 6 million years ago. The University of Marseille geologist was all set to renew long-standing ties with his Algerian colleagues when the death of a 19-year-old man in police custody touched off fatal clashes between police and protesters in the Kabylie region. The unrest led the French government to advise against travel to Algeria, scuppering Saint Martin's trip and putting other collaborative projects on hold.

Scientists had hoped that 2001 would be a bright spot for Algerian research. Earlier this year the government approved unprecedented investments in science, with the goal of luring back talented Algerians working abroad. That program drew upon Algeria's ties with France—its former colonial occupier and lifeline to the West—that had been renewed in 1998 after a bloody decade of unrest in the country.

But that momentum was halted by the Kabylie riots and was reversed following the 11 September terrorist attacks in the United States. In response, officials from CNRS, France's basic research agency, cancelled a meeting in Tunis, leaving dozens of joint projects in limbo. Then a deadly terrorist bombing last month in Algiers revived fear that the country might be descending into another vortex of violence.

Algeria's latest woes have polarized opinion about the future of the country's science. Researchers looking to do fieldwork, such as Saint Martin, are pessimistic about a quick resumption of their projects. But several Algerian scientists believe that the recent improvement in relations with France and commitments from their own leaders will not be reversed. "There is a genuine attitude from the government to strengthen science," says a chemist at the University of Biskra who wished to remain anonymous.

At stake is the preservation of one of the most established scientific communities in Africa. Although a 159-year-long occupation emphasized activities that served French interests, such as oil exploration and drilling, it also trained several generations of Algerian-born scientists, says Yamina Betta-

har, an expert on Algerian-French scientific relations who's based at the Institute of Political Studies in Paris. During World War II, Algiers even served as headquarters for an expatriate CNRS that opposed the Vichy government's puppet CNRS.

Even after independence in 1962, thousands of Algerian students continued coming to France to study. Those who stayed include physicist Abderrahmane Tadjeddine, director of the Laboratory for the Use of Synchrotron Radiation (LURE) in Orsay. The flow was not only one way, as many French scientists viewed a short stay in Algeria as a good career move. The two countries strengthened their connection by forming a committee to review and fund joint research; by the end of the 1980s, the panel was spending \$1.5 million a year and supporting up to 90% of Algeria's fundamental research.

The bond began to fray in the 1990s, after civilian massacres begat government reprisals. French scientists ceased coming south, and funding dried up. "Algerians tried to show that everything was normal, but the committee forbade French scientists from traveling," says the committee's former president, Jean-Pierre Gelard. Preoccupied with quelling violence, the Algerian government starved its research establishment. "The lack of materials became an enormous brake," says Gilles Bouet, a chemist at the University of Angers. Researchers had to travel abroad more frequently and stay longer to keep their scientific skills sharp.

"During the dark years, planes were full of Algerian scientists coming to France," says Bettahar. The exodus turned Algerian

universities into shadows of their former selves. It was so bleak, Gelard says, that he feared "cooperation would disappear."

But tensions in Algeria began to subside, and in September 1998 Gelard and other officials visited Algiers, in armored cars protected by snipers, for the purpose of jump-starting scientific cooperation. This fall the bilateral committee approved 28 new projects for 2002. As a separate initiative, the Algerian government last May committed \$46 million to equip more than 450 labs. It hopes that the improved conditions will lure back some of the 2500 Algerian scientists thought to be working abroad.

"The situation is much better now," says Louisa Boudiba, a chemist at the University of Tébessa, who used the money to buy infrared spectrometry equipment for fabricating and studying potential electrical conductors. It was her lab's first major instrument purchase in years. But she still can't buy the liquid nitrogen she needs to extend her

studies into the low-temperature realm because the coolant is on a long list of materials forbidden from public sale because of its potential use in making weapons.

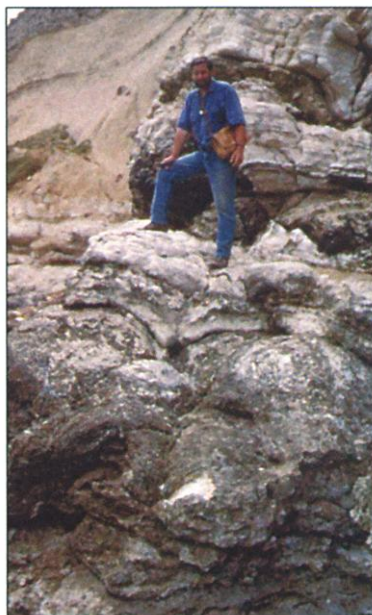
Getting their French colleagues to visit is also a daunting prospect for Algerian scientists. Catastrophic floods last month destroyed phone lines in northern Algeria, disrupting communications. And although CNRS now allows French researchers to visit Algerian cities, work in the countryside is off limits because of the danger from paramilitary groups.

The uncertainty eats at researchers like Serge Elmi, a paleontologist at the University of Lyon, who until 1993 prospected for Jurassic fossils in western Algeria. Earlier this year, his collaborators at

the University of Oran and the oil firm Sonatrach excavated sauropod remains along the Moroccan border—without his help. "I'm going round in circles," says Elmi, who has sent microscope supplies to help his colleagues study the latest samples. He intends to be in the field next spring, under armed guard if necessary. That sort of resolve might be necessary to sustain Algeria's French connections—and its links with the rest of the scientific world.

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Better days. In 1991, Jean-Paul Saint Martin and a colleague explored an outcrop near Oran, west of Algiers, for clues to how much the Mediterranean shrank 6 million years ago.